What is claimed is:

1. A method for rapid and efficient purification of proteasomes from cells comprising:

a) immobilizing an amino acid sequence having a UbL domain to a solid support;

b) exposing said immobilized UbL domain to a cell lysate;

c) eluting non-specifically bound proteins; and

d) eluting said proteasome from said solid support, thereby purifying said proteasome from said cell lysate.

2. A method as claimed in claim 1, wherein said UbL domain has the amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO: 11, and SEQ ID NO: 12.

3. A method as claimed in claim 1, wherein said UbL domain and said cell lysate are isolated from the same species.

4. A kit for the rapid purification of proteasomes from a cell lysate, said kit containing:

a UbL domain affixed to a solid support, one or more containers, a wash solution and an elution buffer.

5. A kit as claimed in claim 4, further comprising a solution useful in performing a purification method of the invention, selected from the group consisting of saline, buffer, diluent, and frozen cell extract.

6. A DNA construct encoding a fusion protein for assessing the proliferative potential of malignant cells comprising:

a) a first nucleic acid sequence encoding a promoter element; and

b) a second nucleic acid sequence encoding a UbL domain operably linked to a third nucleic acid sequence encoding a reporter gene, expression of said UbL domain and said reporter gene being regulated by said promoter.

7. A DNA construct as claimed in claim 6, said construct being inserted into a vector.

8. A DNA construct according to claim 6, wherein said second nucleic acid encodes a UbL domain having an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO: 11, and SEQ ID NO: 12.

9. A DNA construct according to claim 6, wherein said reporter gene is selected from the group of genes consisting of βgalatosidase, URA3, luciferase, mammalian chloramphenicol transacetylase (CAT) gene, and green fluorescent protein (GFP) gene.

10. A method for assessing the proliferative potential of malignant cells, comprising:

a) introducing into a target cell a DNA construct encoding a fusion protein, said fusion protein comprising a UbL domain operably linked to a reporter

molecule; and

b) assessing the half-life of said fusion gene, a short half-life being indicative of a rapidly growing cell and a longer half-life being indicative of a quiescent cell.

11. A method as claimed in claim 10 wherein said UbL domain has an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO: 11, and SEQ ID NO: 12.

12. A method as claimed in claim 10, wherein said reporter gene is selected from the group of genes consisting of βgalatosidase, URA3, luciferase, mammalian chloramphenicol transacetylase (CAT) gene, and green fluorescent protein (GFP) gene. consisting of

13. A DNA construct encoding a thermostable fusion protein, comprising a first nucleic acid sequence encoding a UbL domain operably linked to a second nucleic acid sequence encoding a protein of interest.

14. A DNA construct as claimed in claim 11, wherein said first nucleic acid sequence encodes a UbL domain having an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO: 11, and SEQ ID NO: 12.

15. A DNA construct as claimed in claim 11, wherein said second nucleic acid molecule encodes a polymerase enzyme.

16. A DNA construct encoding a fusion protein for selecting for drug resistance in malignant cells comprising:

a) a first nucleic acid sequence encoding a promoter element; and

b) a second nucleic acid sequence encoding a UbL domain operably linked to a third nucleic acid sequence encoding a selectable marker gene, expression of said UbL domain and said selectable marker gene being regulated by said promoter.

17. A DNA construct as claimed in claim 16, wherein said second nucleic acid gene encodes a UbL domain having a sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO: 11, and SEQ ID NO: 12.

18. A DNA construct as claimed in claim 16, wherein said selectable marker gene is selected from the group consisting of the neomycin gene, or antibiotic resistance genes.